CLAIMS

1. A substrate for growth of nitride semiconductor for growth of a nitride semiconductor layer on a sapphire substrate comprising:

a layer including N, O and Al as separately provided on the sapphire substrate, and

wherein the layer contacts with the sapphire substrate at a first surface thereof and is formed such that a proportion of N to a composition ratio of N, O and Al in the first surface is smaller than that of N to the composition ratio of N, O and Al in a second surface contacting with a nitride semiconductor layer and that a proportion of O to the composition ratio in the first surface is larger than that of O to the composition ratio in the second surface.

2. A substrate for growth of nitride semiconductor for growth of a nitride semiconductor layer on a sapphire substrate comprising:

an Al_2O_3 layer as separately provided on the sapphire substrate; and

either one layer of an AlON layer or an AlN layer provided on said Al_2O_3 layer.

3. A substrate for growth of nitride semiconductor for growth of a nitride semiconductor layer on a sapphire substrate comprising:

an Al_2O_3 layer as separately provided on the sapphire substrate;

an AlON layer which is the first layer;

an AlN layer which is the second layer;

a structure in which the first layer and the second layer are deposited on the Al_2O_3 layer in this order.

4. The substrate for growth of nitride semiconductor according to any of claims 1 to 3, wherein a cap layer made of Al_2O_3 is provided as the uppermost layer of the substrate for growth of nitride semiconductor.